

Application No. 10/772,102

REMARKS

Claims 1-14 and 16-26 are pending. By this Amendment, claims 16, 18 and 21 are amended. The amendment of claim 16 is supported by the specification, for example, at page 4, lines 7-8 and page 19, line 28 to page 20, line 7. The amendment of claims 18 and 21 are supported by the specification, for example, at page 22, lines 12-18. No new matter is introduced by the amendments.

Applicants note with appreciation that claims 1-14 have been allowed. Claims 16-26 stand rejected. Applicants respectfully request reconsideration of the rejections in view of the following comments.

Rejection Over Van der Wal et al. For Anticipation

The Examiner rejected claim 16 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,478,800 to van der Wal et al. (the van de Wal patent). Applicants incorporate by reference their arguments with respect to this reference from the response of October 19, 2004. To advance prosecution of the case, Applicants have amended claim 16 to clarify the scope of their invention. In the final Office Action, the Examiner commented as follows: "The claims do not state where these particles are located and thus does not exclude particles on a substrate." Applicants respectfully request reconsideration of the rejection in view of the following comments.

Applicants have clarified that the particles are within a powder. In contrast, the van der Wal patent teaches "particles" adhered to a substrate. While Applicants maintain that the reference clearly teaches a nanostructured surface rather than particles in any reasonable interpretation of the term, the van der Wal patent still uses the term particle. However, the van der Wal patent clearly does not teach the particle being within a powder. Therefore, the van der Wal patent clearly does not prima facie anticipate Applicants' claimed invention. Applicants

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respectfully request withdrawal of the rejection of claim 16 under 35 U.S.C. § 102(b) as being anticipated by the van de Wal patent.

Rejection Over van de Wal et al. For Obviousness

The Examiner rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over the van der Wal patent. Claim 17 depends from claim 16. To advance prosecution of the case, Applicants have amended claim 16 to indicate that the particles are in a powder. The van der Wal patent does not teach, suggest or motivate the sulfurization reaction within a powder. Thus, the van der Wal patent clearly does not render claim 17 *prima facie* obvious. Applicants respectfully request withdrawal of the rejection of claim 17 under 35 U.S.C. § 103(a) as being unpatentable over the van der Wal patent.

Rejection Over Espin et al.

The Examiner rejected claims 16 and 17 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,447,577 to Espin et al. (the Espin patent). To advance prosecution of the application, Applicants have amended claim 16 to indicate that the particles are within a powder and that the powders are stirred. Applicants respectfully request reconsideration of the rejection based on the following comments.

The Espin patent does not teach stirring the particles. As presently specified in the claimed invention, the powders are stirred. Since the Espin patent does not teach stirring, the Espin patent does not *prima facie* anticipate Applicants' claimed invention. Applicants respectfully request withdrawal of the rejection of claims 16 and 17 under 35 U.S.C. § 102(e) as being anticipated by the Espin patent.

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Rejection Over Gray et al.

The Examiner rejected claims 18-26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,090,200 to Gray et al. (the Gray patent). Applicants incorporate by reference their comments from the Amendment of October 19, 2004. Also, to advance prosecution of the application, Applicants have amended claim 18 to more particularly point out their claimed invention. Applicants respectfully request reconsideration of the rejection in view of the following comments.

As amended, claim 18 indicates that the average particle diameter is at least about 35 nanometers. The Gray patent teaches away from particles having a size greater than 30 nm. See specifically, for example, column 3, lines 10-19. Since the Gray patent teaches away from particles within the claimed size, the Gray patent does not render the present claims *prima facie* obvious. Applicants respectfully request withdrawal of the rejection of claims 18-26 under 35 U.S.C. § 103(a) as being unpatentable over the Gray patent.

Rejection Over Riman et al.

The Examiner rejected claims 18, 20 and 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent 6,699,406 to Riman et al. (the Riman patent). Applicants incorporate by reference their arguments from the Amendment of October 19, 2004. Applicants maintain that the Riman reference teaches crystallite sizes and not particle sizes. Furthermore, since the Riman patent does not disclose suitable reactants for forming sulfides, the Riman patent does not provide a reasonable expectation of success with respect to Applicants' claimed invention. Thus, the Riman patent does not render Applicants' claimed invention *prima facie* obvious. Applicants respectfully request reconsideration of the rejection based on the following comments.

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A reference must provide a reasonable expectation of success to render a claim unpatentable. However, the Riman patent does not describe any sulfides specifically, any reactants needed to form sulfides or an appropriate specific process to make metal/metalloid sulfides. Since the Riman patent provides no guidance at all regarding the formation of sulfides, the Riman patent clearly provides no reasonable expectation of success with respect to the formation of doped metal/metalloid sulfide nanoparticles.

Also, as noted by the Examiner, the Riman patent uses the term nanoparticles. However, when describing the specific size ranges, the Riman patent is careful to use the term "crystallite size." See, column 5, lines 59-63. The crystallite size may or may not be the same as the particle size. The issue is whether or not the particles are single crystalline or polycrystalline. See, for example, U.S. Patent 6,586,785. In some situations, measurements are only made relating to the crystallite size, such as broadening of an x-ray diffractogram. Thus, no information may be available on the particle size. With respect to the Riman patent, the Riman patent does not describe how to measure the sizes of anything. Therefore, it is difficult to determine what size to which the Riman patent is referring. Nevertheless, the Riman patent is very specific that the size ranges are for the crystallites and not the particles. Therefore, Applicants maintain that the Riman patent does not teach nanoparticles in the specified ranges.

Since the Riman patent does not provide a reasonable expectation of success and does not teach particles in the claimed size range, the Riman patent does not render Applicants' claimed invention prima facie obvious. Applicants respectfully request withdrawal of the rejection of claims 18, 20 and 21 under 35 U.S.C. § 103(a) as being unpatentable over the Riman patent.

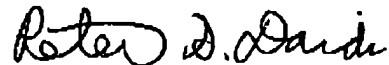
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CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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